posterior end. These were regenerated after liberation. The encysted Paramecia were killed by drying. From material obtained from a number of localities *Paramecium aurelia* was found to be dimorphic as regards size and the smallest specimens smaller than the smallest of *Paramecium caudatum*. "The Artificial Production and Development of One-eyed Monsters," by Charles R. Stockard. Salts of magnesium in solution are found to cause one-eyed monsters to develop from the eggs of the fish, *Fundulus heteroclitus*. These cyclopean individuals were produced in such numbers as to afford material for a full investigation of the processes involved in the formation of the defect.

BOTANICAL NOTES

VEGETATION PICTURES

SOME years ago Professors Karsten and Schenck, the former of the University of Bonn, and the latter of the Technical High School of Darmstadt, began the publication, through Gustav Fischer, of Jena, of a most interesting work under the title of "Vegetationsbilder." From time to time the successive parts have been noticed favorably in these columns, and now the reception of "Heften" 1 and 2 of the seventh volume calls for another notice. These are devoted to the vegetation of the volcanic regions of Java and Sumatra, and were prepared by Professor A. Ernst, of the University of Zurich, and the seventeen half-tone plates were made from photographs taken by him also. These plates are admirable examples of what may be done in the way of faithful reproduction, and make one wonder why it is so difficult, or perhaps even impossible, to secure work of this kind in this country at anything less than prohibitive prices. It is difficult to single out from these striking pictures those of greatest interest, but No. 5*a* showing pioneer vegetation on the volcano Merapi (2,981 meters), and No. 11*a* showing a grass steppe in the interior of the volcano Krakatau are especially noticeable. The text, of which there are twenty-four pages, is full and satisfactory. The excellence of the work, together with its very moderate price (2.50 Marks per heft) should make it one of the necessary works in every botanical library.

ANOTHER BOTANICAL JOURNAL

ON the first of January the well-known publisher, Gustav Fischer, of Jena, began the publication of a promising new monthly journal in the botanical field under the name *Zeitschrift für Botanik*. In size of page and number of pages for each number it resembles the *Botanical Gazette*, which in these respects was frankly taken by the projectors as the model for the new journal. The editors are Oltmanns, Solms-Laubach (who now withdrew from the *Botanische Zeitung*) and Jost, which fact is a guarantee of the high grade of the journal. This initial number consists of three parts, viz., (1) an original article of 86 pages; (2) reviews, covering 16 pages, and (3) a classified list of titles of new botanical books and papers. In the first paper there are 26 cuts, but this number contains no plates. The type and paper are good. The subscription price is fixed at 24 Marks. It will without doubt soon prove to be one of the most useful of the German botanical journals.

AMENDING THE VIENNA CODE

IN the February number of the *Bulletin of the Torrey Botanical Club* nineteen American botanists print eleven motions for amendments to the Vienna Code, and present arguments therefor. These motions are submitted "for the consideration of the International Botanical Congress to be held in Brussels in 1910." Briefly these motions cover the following points:

1 and 2. To apply these rules to fossil plants and non-vascular plants, which is not now done in the code. These appear to be desirable motions, and should be adopted.

3. To abolish the list of "Nomina conservanda," *i. e.*, names arbitrarily conserved contrary to the principle of priority. Here the contention of the committee is sound, and ultimately the code must be so amended as to conform to it, but whether this should be insisted upon at the present time admits of argument.

4 and 5. To change the rule requiring Latin diagnoses, to "Latin, French, English or German." The rule as adopted in Vienna is better, in our opinion, than the proposed modification.

6. To more clearly indicate valid and invalid naming of genera and higher groups. Here the committee's proposed amendments certainly make the rule more definite.

7. To provide for the disposition of the species when a genus is divided into two or more genera. Here again the committee's recommendation is much more specific than the rule in the code, and seems to provide for all the cases that may come up under it, which the original rule does not.

8. To provide for the proper retention of the original name in the division of a species. The committee's rule is much more specific and is a marked improvement upon the rule in the code.

9. To provide that priority of place upon the page shall be actual priority in the case of simultaneous publication of names. This is so reasonable that it should meet with no opposition.

10. To provide for the rejection of certain names by a more definite indication of the cases. The committee would reject "homonyms," "metonyms," "typonyms" and "hyponyms." Their statement is better than that of the code and may well be adopted by the congress.

11. To allow the specific name to be the same as the generic name, as in the familiar cases of *Taraxacum taraxacum, Linaria linaria,* etc. The Vienna Code requires the rejection of the specific name in such cases, in spite of the law of priority. The committee very properly regard this as "an unfortunate exception to the general law of priority."

On the whole it seems that this committee of American botanists is warranted in presenting its motions for amendments. With the exception of the fourth and fifth, relating to the diagnoses of new groups, we hope that these motions for amendments will be adopted.

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SPECIAL ARTICLES

A DISCUSSION OF SOME OF THE PRINCIPLES GOVERNING THE INTERPRETATION OF PRE-PERSOONIAN NAMES, AND THEIR BEARING ON THE SELECTION OF A STARTING-POINT FOR MYCOLOGICAL NOMENCLATURE[1]

If there is any one fact which more than others has become increasingly evident during the last thirty years in the study of fungi it is that a thorough examination of their microscopic characters is necessary for the certain determination of most of the species. The older systematists based their species entirely upon external characters. While the spores of fungi were early observed, they were regarded as of no importance systematically, and even as late as 1849 Fries himself forcibly stated that in the whole family of Discomycetes no natural genera could be based on carpological characters. In the decade between 1860 and 1870, however, influenced by the work of the Tulasne brothers and of de Bary, systematists turned their attention more seriously to the study of microscopic characters, and it at once became evident that important diagnostic marks were to be found in structures too small to be seen with the unaided eye. The great amount of careful morphological and developmental work which has been done among the fungi during the last thirty-five years has only emphasized the importance which should be attached to microscopic characters in distinguishing genera and species in this group. To such lengths has this tendency developed that in recent years whole systems of classification have been proposed based almost entirely on microscopic features, and in the eyes of all workers such characters have come to be regarded as the most important available bases for generic and specific distinction.

This method of study has frequently developed the fact that two or more plants, externally indistinguishable, really represented as many different species or even distinct genera. Illustrations of this condition are

[1] A paper read before the Botanical Society of America at its meeting in Baltimore, December 31, 1908.